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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/517,345	12/09/2004	Isao Gunji	262819US3PCT	5575
22850 7590 02/01/2007 OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER CHANDRA, SATISH	
			ART UNIT 1763	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE			MAIL DATE	DELIVERY MODE
3 MONTHS			02/01/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

**Application No.**

10/517,345

**Applicant(s)**

GUNJI ET AL.

**Examiner**

Satish Chandra

**Art Unit**

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1- 7 and 10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 1/05.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**Claims 1 – 5 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Funaki et al (US 2003/0205202).**

**Regarding claims 1 and 10, Funaki et al discloses a plasma CVD device comprising:**

A chamber 200 (Fig 1, Para 0056 - 0058) defining a process area,

A lower electrode (mounting table) 220 disposed in the chamber 200 for mounting the object W on it to be processed,

A gas supply unit (Para 0061) for supplying a gas into the chamber 200 with a gas dispersion holes 214,

A lower electrode (mounting table) 220 disposed substantially parallel to the gas dispersion plate 211 (surface) of the chamber,

In a substantially vertical cross section of the chamber 200 taken along a flow of the gas from the gas supply port 214 toward the object W to be processed, an upper electrode (side wall) 210 ) of the chamber 200 defining the processing area and abutting

on the gas dispersion plate (surface) 211 and forms an angle greater than 90 degrees with the surface of the chamber close to the mounting table,

The side surface of the lower electrode (mounting table) 220 on which wafer (object) to be processed is configured to match the slant of the sidewall.

**Regarding claim 2**, the gas dispersion plate is configured to have a substantially same area as that of the wafer (object) W.

**Regarding claim 3**, lower electrode (mounting table) 220 on which wafer (object) to be processed is mounted forms an angle greater than 90 degrees (Fig 1) with a side surface of the mounting table abutting on the mounting surface.

**Regarding claim 4**, the lateral surface 222 of the lower electrode (mounting table) 220 is fashioned in such a manner as to be parallel with the side-wall 2a of the chamber (Para 0063, Fig 1).

**Regarding claim 5**, distance between the sidewall of the chamber 400 (Fig 7) and the side surface of the mounting table (lower electrode) is less than the distance between the surface (gas distribution plate) of the chamber 400 and object W to be processed.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al (US 2003/0070617) in view of Cook et al (US 2003/0049372).**

**Kim et al discloses:**

A processing chamber 4 (Fig 1) defining a processing area,

A mounting table 3, disposed in the chamber 4 for mounting thereon wafers 2 to be processed, a gas supply port (not labeled) for supplying a gas into the chamber 4

A sidewall of the chamber (not labeled) defining the process area and abutting on the surface (not labeled) of the chamber forms an angle greater than 90 degrees with the surface of the chamber and extends close to the mounting table 3.

**Kim et al does not disclose:**

Mounting table 3 disposed substantially parallel to the flow direction of the gas supplied.

**Cooke et al discloses** a single wafer reactor (Fig 3) in which the gas is supplied parallel to the upper surface of the mounting table.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a mounting table parallel to the flow of the horizontal gas in the apparatus of Kim et al as taught by Cook et al.

The motivation for providing a horizontal gas flow in the apparatus of Kim et al is to provide an alternate and equivalent mounting table (susceptor) arrangement.

**Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Funaki et al (US 2003/0205202) in view of Carpenter et al (US 2004/0089233).**

**Regarding claim 7, Funaki et al discloses a plasma CVD device comprising:**

A chamber 200 (Fig 1, Para 0056 - 0058) defining a process area,

A lower electrode (mounting table) 220 disposed in the chamber 200 for mounting the object W on it to be processed,

A gas supply unit (Para 0061) for supplying a gas into the chamber 200 with a gas dispersion holes 214,

A gas exhaust port 203 for evacuating the chamber 200 wherein on of the sidewalls 2a of the chamber 200 defining the processing area and abutting on one surface (gas distributing plate (not labeled) containing gas distribution holes 214 of the chamber forms an angle greater than 90 degrees and extends close to at least a portion of an outer surface of the object W to be processed.

**Funaki et al does not disclose:**

The gas flows a passageway whose cross sectional area is gradually decreased from a distal end of the object to be processed to the gas exhaust port.

**Carpenter et al discloses:**

An apparatus 12 (Fig 1) wherein the gas flows 16 a passageway whose cross sectional area is gradually decreased from a distal end 26 of the object to be processed to the gas exhaust port 42.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a gas flow passageway whose cross sectional area is gradually decreased from a distal end of the object to be processed to the gas exhaust port in the apparatus of Funaki et al as taught by Carpenter et al.

The motivation for providing a gas flow passageway whose cross sectional area is gradually increased from the gas supply port to a proximal end of the object to be processed and is gradually decreased from a distal end of the object to be processed to the gas exhaust port is to provide a greater amount of gas above the surface of the object to be treated.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Satish Chandra whose telephone number is 571-272-3769. The examiner can normally be reached on 8 a.m. - 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, Primary Examiner, Jeffrie R. Lund can be reached on 571-272-1437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Satish Chandra

SC

1/26/2007

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Jeffrie R. Lund  
Primary Examiner